

Remarks:

Claims 23-26, 28, 32-35, and 78-84 remain for consideration in this application. Claims 30-31 and 36 have been canceled in this amendment, and claims 80-84 are newly added. As a result of the species election, claims 1-22 and 69-74 were withdrawn, but not canceled. Of course, Applicants reserve the right to have claims 1-22 and 69-74 considered upon allowance of a generic claim. In view of the claims as they now stand, in combination with the remarks hereunder, the rejection of the Office Action dated March 9, 2007, must respectfully be traversed.

The Examiner has rejected claims 23, 28, 35, and 78 as being anticipated by U.S. Patent No. 3,398,044 to Pleuddenmman, and claims 23, 35, and 78 as being anticipated by U.S. Patent No. 3,461,027 to Pleuddenmman. The Examiner also rejected a number of dependent claims and independent claim 79 as being obvious in view of U.S. Patent No. 3,398,044 and U.S. Patent No. 3,461,027 to Pleuddenmman. Finally, the Examiner rejected claims 23-26, 28, 30-36, and 78-79 as being obvious in view of U.S. Patent No. 3,585,103 to Thompson.

Of the remaining claims, claims 23, 78, and 79 are in independent format. Claim 23 has been amended to include the limitations of former dependent claims 30 and 31. That is, claim 23 now recites that the structure comprises a second protective layer adjacent said first protective layer, wherein said second protective layer comprises a halogenated polymer. Claims 78 and 79 have also been amended to include these limitations. Thus, the anticipation rejections raised against claims 23 and 78 based on Pleuddenmman, in paragraphs 3-4 of the Office Action, should now be withdrawn as the Examiner did not raise these rejections against claims 30 or 31. Rather, claims 30-31, were rejected as being obvious in view of the Pleuddenmman references. However, Applicants

respectfully traverse this rejection, because, for example, the Pleuddenmman references, either or alone or in combination, fail to teach or suggest each and every limitation of independent claims 23, 78, and 79.

Applicants submit that there is no teaching or suggestion in the Pleuddenmman references of a structure comprising (1) a microelectronic substrate, (2) a primer layer adjacent said substrate, (3) a first protective layer adjacent said primer layer, and (4) *a second protective layer adjacent said first protective layer, wherein said second protective layer is comprised of a halogenated polymer*, as recited in claims 23, 78, and 79. Rather, the Pleuddenmman references are concerned with creating laminates by bonding a polymer to a substrate with a bonding/primer material between the polymer and substrate layer. (See '044 Patent Col. 2, lines 13-16.) Even in the multiple layer embodiments, each layer alternates between polymer and substrate, and each is *always* separated by the bonding/primer material. Moreover, each disclosed embodiment uses only one kind of a polymer at a time. Thus, even assuming *arguendo* that the layer of polymer in the Pleuddenmman references (see polymer (b), Col. 1, line 49 of the '044 Patent), could be compared to the first protective layer of the present claims, and even if the references could be considered to disclose a halogenated polymer as asserted by the Examiner, neither Pleuddenmman reference “reads on” the claimed second protective layer comprising a halogenated polymer *adjacent* the first protective layer. Rather, the Pleuddenmman references disclose that regardless of the kinds of polymers used, there is always a layer of primer/bonding material adjacent the polymer layer. (See '044 Patent, Col. 3, lines 69-75; Col. 4, lines 16-19, 71-75; Col. 5, lines 55-57, 61-71. '027 Patent, Col. 1, lines 54-55; Col. 2, lines 4-6; Col. 3, lines 24-25, 34; Col. 5, lines 19-23; Col. 6, lines 27-32.) That is, although both

Pleuddenmman references disclose a laundry list of polymers, there would be no “apparent reason” for one of ordinary skill in the art to place two polymer layers adjacent each other, with no primer layer in between, and certainly nothing to teach or suggest using different polymers for each layer, as claimed, based upon the teachings of the Pleuddenmman references and the general knowledge of those skilled in the art. *See KSR Int’l Co. v. Teleflex Inc.*, No. 04-1350, 2007 WL 1237837 at \*13, 82 U.S.P.Q.2d 1385 (S. Ct. April 30, 2007). Further, Applicants submit that altering Pleuddenmman as suggested would render the disclosed composites unsuitable for their intended use as laminates. Accordingly, because the Pleuddenmman references fail to teach or suggest each and every claim limitation, independent claims 23, 78, and 79 are not obvious in view of these references, and the rejections must be traversed.

Furthermore, in addition to failing to teach or suggest all of the claim limitations, Applicants respectfully submit that the Pleuddenmman references are non-analogous art. One inquiry to be made in rendering an obviousness determination, is to determine the scope and content of the prior art. A determination of the scope and content of the prior art involves distinguishing analogous art from non-analogous art. *See, In re Clay*, 966 F.2d 656, 658, 23 U.S.P.Q.2d 1058 (Fed. Cir. 1992). Only analogous art should be used when making an obviousness determination. To be considered analogous art, a reference must satisfy one of two criteria. *Id.* at 659-59. First, a reference is considered analogous if it is within the same field of endeavor as the claimed invention, regardless of the problem addressed. *Id.* Alternatively, even if a reference is not within the inventor's field of endeavor, the reference may still be analogous if it is reasonably pertinent to the particular problem with which the inventor is involved. *Id.* That is, a reference is analogous art if “it is one which,

because of the matter with which it deals, logically would have commended itself to [the] inventor's attention in considering his problem." *Id.*

In considering the first criterion, it is clear that the Pleuddenmman references are not within the same field of endeavor as the claimed invention. That is, the Pleuddenmman references are concerned with bonding organic or thermoplastic polymers to substrates using bonding/primer material and pressure to create multi-ply laminates or composites. In contrast, the present application is concerned with the field of forming microelectronic devices (particularly with microlithographic processes) and coatings used to form such devices.

The next criterion to consider in determining whether the Pleuddenmman references are analogous art is whether those references are reasonably pertinent to the problem that the inventors of the present claims were addressing. This criterion is not met by the Pleuddenmman references. The claimed invention is concerned with the problems associated with microelectronic substrates coming in contact with etchants during lithographic processes. For example, without a protective coating, the etchant will etch away the substrate, which is highly undesirable and will lead to defects in the final device. Applicants have discovered that the use of a second protective layer comprising halogenated polymers, as claimed, adds a further benefit to the claimed microelectronic structure in that it protects the underlying coatings from dissolving in strong aqueous acids that are often used during many microlithographic processes. Without these second coatings, the acids will dissolve, or diffuse through, the first protective coatings and attack the underlying substrate. In the Pleuddenmman references, the disclosed composites and laminates would not have encountered these problems, so there would be nothing in the teachings of the art of record that would motivate

one of ordinary skill in the art to add such a layer. In particular, the '044 patent is concerned with improving the strength and hydrolytic stability of the bond between organic polymers and inorganic substrates in laminates, while the '027 patent is concerned with providing primers for improving the adhesion of siliceous materials to thermoplastics in the manufacture of glass reinforced thermoplastic composites or laminates, without discoloring the thermoplastic when molded at high temperatures. The Pleuddenmman references are, therefore, not at all pertinent to the problems addressed by the present application. Thus, neither of the relevant criteria is met by the Pleuddenmman references. It is respectfully submitted that the Pleuddenmman references are non-analogous art, and that it is improper to use these references as part of an obviousness rejection.

Claims 23-26, 28, 30-36, and 78-79 were also rejected as being obvious in view of the Thompson reference. For at least the following reasons, Applicants submit that these claims are patentable over the Thompson reference, and the rejection must respectfully be traversed.

For example, there is no teaching or suggestion in the Thompson reference of a structure comprising (1) a microelectronic substrate, (2) a primer layer adjacent said substrate, (3) a first protective layer adjacent said primer layer, and (4) *a second protective layer adjacent said first protective layer, wherein said second protective layer is comprised of a halogenated polymer*, as recited in claims 23, 78, and 79. Rather, like Pleuddenmman, the Thompson reference is concerned with primer compositions for improving the bonding of polymers to glass, metal, and metal oxide substrates in the manufacture of multi-ply laminates. More specifically, the Thompson reference specifically discloses that the laminates are prepared by “alternating plies of the [primed substrate] and sheets of the [polymer] film” and then pressure molding to create a multi-ply laminate. Col. 5,

lines 11-12. That is, based upon the teachings of the Thompson reference, there would be no “apparent reason” for a person of ordinary skill in the art to apply another polymer layer adjacent the first polymer layer in Thompson, and nothing to suggest using different polymers for each layer. Accordingly, there is nothing in the Thompson reference to teach or suggest the claimed second protective coating comprising a halogenated polymer adjacent the first protective coating, as recited in independent claims 23, 78, and 79, and the rejection must be withdrawn.

In addition, while dependent claims 24-26, 28, 32-35, 80-84 recite additional patentable features, these claims should also be patentable over the art of record as depending from patentable independent claims. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). New claims 80-84 have been added to further define the thickness of the first and second protective layers. Although the Examiner asserted that thickness is a “result-effective variable,” Applicants respectfully disagree that the claimed thicknesses are obvious. In particular, the claimed thickness of about 1-5  $\mu\text{m}$  for the first and/or second protective layers, is extremely thin when compared to conventional coatings, and especially when compared to the polymer layers disclosed in the cited art. For example, Thompson discloses polypropylene film with thicknesses of 5-20 mils (i.e., 127-508  $\mu\text{m}$ ; Examples 1, 14-15, 18-19), while Pleuddenmman discloses that the 14-ply laminates have an overall thickness of about 0.14 inches (Examples), resulting in an average single layer thickness of about 254  $\mu\text{m}$ , for comparison. Moreover, thickness might be a result-effective variable in the sense that the thicker the layer, the more protection it provides. In contrast, the protective coatings of the present invention provide improved protection using a thinner layer. Accordingly,

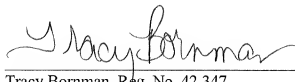
conventional understanding teaches away from the claimed thicknesses, which thus, cannot be said to be obvious in view of the cited prior art.

In light of the foregoing it is respectfully submitted that the claims are patentable, and a Notice of Allowance is respectfully requested. Any additional fee which is due in connection with this amendment should be applied against Deposit Account No. 19-0522.

Respectfully submitted,

HOVEY WILLIAMS LLP

by

A handwritten signature in cursive script, appearing to read "Tracy Bornman", written over a horizontal line.

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